1. SOKOLOVSKAYA, R. Ye.

2. USSR (600)

7. "Increasing the Potato's Resistance to Phytophthora Disease", Sbornik Rabot In-ta Prikladnoy Zoologii i Fitopatologii(Symposium of Works of the Institute of Applied Zoology and Phytopathology), No 1, 1951, pp 87-91.

9. Mikrobiologiya, Vol XXI, Issue 1, Moscow, Jan-Feb 1952, pp 121-132. Unclassified.

Sokolovskaya, Revekka Yefremovna

BERIM, Nikolay Grigor'yevich; SOKOLOVSKAYA, Revekka Yefremovna; OSMOLOVSKIY, G.Ye., redaktor; VODOLAGINA, S.D., tekhnicheskiy redaktor

[Chemical protection for plants] Khimicheskaia zashchita rastenii. Moskva, Gos.izd-vo selkhoz.lit-ry, 1955. 206 p. (MLRA 9:3)
(Agricultural chemistry)

BERIM, N.G., dotsent; SOKOLOVSKAYA, R.Ye., dotsent

Simple methods for identifying poisonous chemicals (to be continued). Zashch. rast. ot vred. i bol. 7 no.8:41-43 Ag '62. (MIRA 15:12)

1. Leningradskiy sel'skokhozyaystvennyy institut.
(Agricultural chemicals)

BERIM, N.G., dotsent; SOKOLOVSKAYA, R.Ye., dotsent

Simple methods for identifying poisonous chemicals. Zashch. rast. ot vred. i bol. 7 no.10:35-37 O '62. (MIRA 16:6)

1. Leningradskiy sel'skokhozyaystvennyy institut.
(Agricultural chemicals)

BERIM, N.G., dotsent; SOKOLOVSKAYA, R.Ye., dotsent

Simple methods for identifying poisonous chemicals. Zashch. rast. ot vred. i bol. 7 no.11:40-42 N '62. (MIRA 16:7)

1. Leningradskiy sel'skokhozyaystvennyy institut.

BERIM, Nakhman Zus'-Gershkovich; SOKOLOVSKAYA, Revekka Yefremovna; MINKINA, L.N., red.

[Practical laboratory manual on the chemical protection of plants] Praktikum po khimicheskoi zashchite rastenii. Leningrad, Kolos, 1965. 191 p. (MIRA 18:3)

GOLIK, A.Z. [Holyk, O.Z.]; RYNDICH, N.A. [Ryndych, N.A.]; KUCHINKA, M.Yu. [Kuchynka, M.IU.]; SOKOLOVSKAYA, S.F. [Sokolovs'ka, S.F.]

Effect of thermal and thermomechanical treatment on the density of some synthetic polymers. Ukr. fiz. zhur. 9 no.7:783-791 Jl '64. (MIRA 17:10)

1. Kiyevskiy gosudarstvennyy universitet im. Shevchenko.

AFANAS'YEV, A.N., kand.tekhn.nauk; BASOV, N.I., kand.tekhn.nauk; BELOVITSKIY, A.A., inzh.; VESELOVSKIY, V.S., doktor tekhn.nauk, prof.; GORELIK, B.I., kand.tekhn.nauk; DORONENKOV, I.M., inzh.; ZAK, D.L., inzh.; IVONIN, V.I., inzh. [deceased]; KLINOV, I.Ya., doktor tekhn. nauk, prof.; LEVIN, A.N., doktor tekhn.nauk, prof.; LEVIN, S.N., kand.tekhn.nauk; LEPETOV, V.A., kand.tekhn.nauk; LEONT'YEV, N.L., doktor tekhn.nauk, prof.; LOKHINA, P.I., kand.tekhn.nauk; MATVEYEVA, L.V., inzh.; MIKHAYLOV, A.N., doktor tekhn.nauk, prof.; MUDRIK, Kh.I., kand.tekhn.nauk; PERLIN, S.M., inzh.; SALAZKIN, K.A., kand.tekhn.nauk; SIL'VESTROVICH, S.I., kand.tekhn.nauk; SOKOLOVSKAYA, S.I., kand. tekhn.nauk; KHENKIN, A.A., inzh.; KHUKHRYANSKIY, P.N., doktor tekhn. nauk, prof.; SHEYDEMAN, I.Yu., kand.tekhn.nauk; YASHUNSKAYA, F.I., kand.tekhn.nauk; POGODIN-ALEKSEYEV, G.I., doktor tekhn.nauk, prof., red.; RYBAKOVA, V.I., inzh., red.izd-va; SOKOLOVA, T.F., tekhn.red.

[Handbook on materials used in the manufacture of machinery] Spravochnik po mashinostroitel'nym materialam; v chetyrekh tomakh. Pod red.G.I.Pogodina-Alekseeva. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. Vol.4. [Nonmetallic materials] Nemetallicheskie materialy. Red.toma A.N.Levin. 1960. 723 p. (MIRA 13:7)

(Machinery industry) (Nonmetallic materials)

SOKOLOVSKAYA, S.M.

Some information concerning antibiotics. Apt.delo 12 no.5: 93 S-O'63. (MIRA 16:11)

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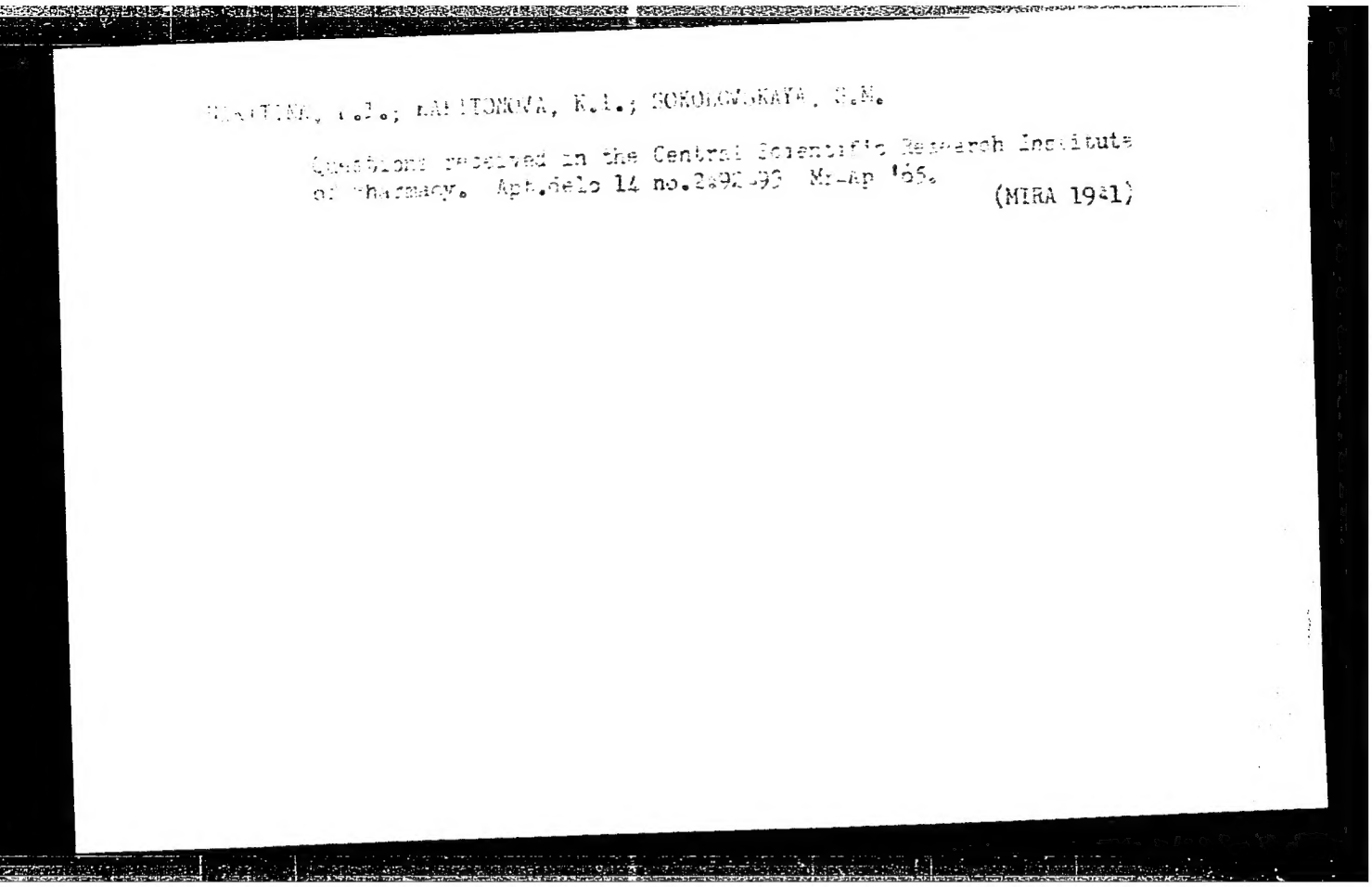


[illegible], L.I.; KALITONOVA, K.I.; SOKOLOVSKAYA, S.M.

Questions received in the Central Scientific Research Institute of Pharmacy. Apt.delo 14 no.2[illegible] Mr-Ap '65. (MIRA 1981)

YAKUBCHIK, A.I.; NIKITINA, V.D.; Prininala uchastiye SOKOLOVSKAYA, S.N.

Chemical structure of rubidium catalyzed bivinyl polymers. Zhur. prikl.khim. 35 no.11:2491-2495 N '62. (MIRA 15:12)
(Butadiene ploymers) (Rubidium)

SOKOLOVSKAYA, S. V.

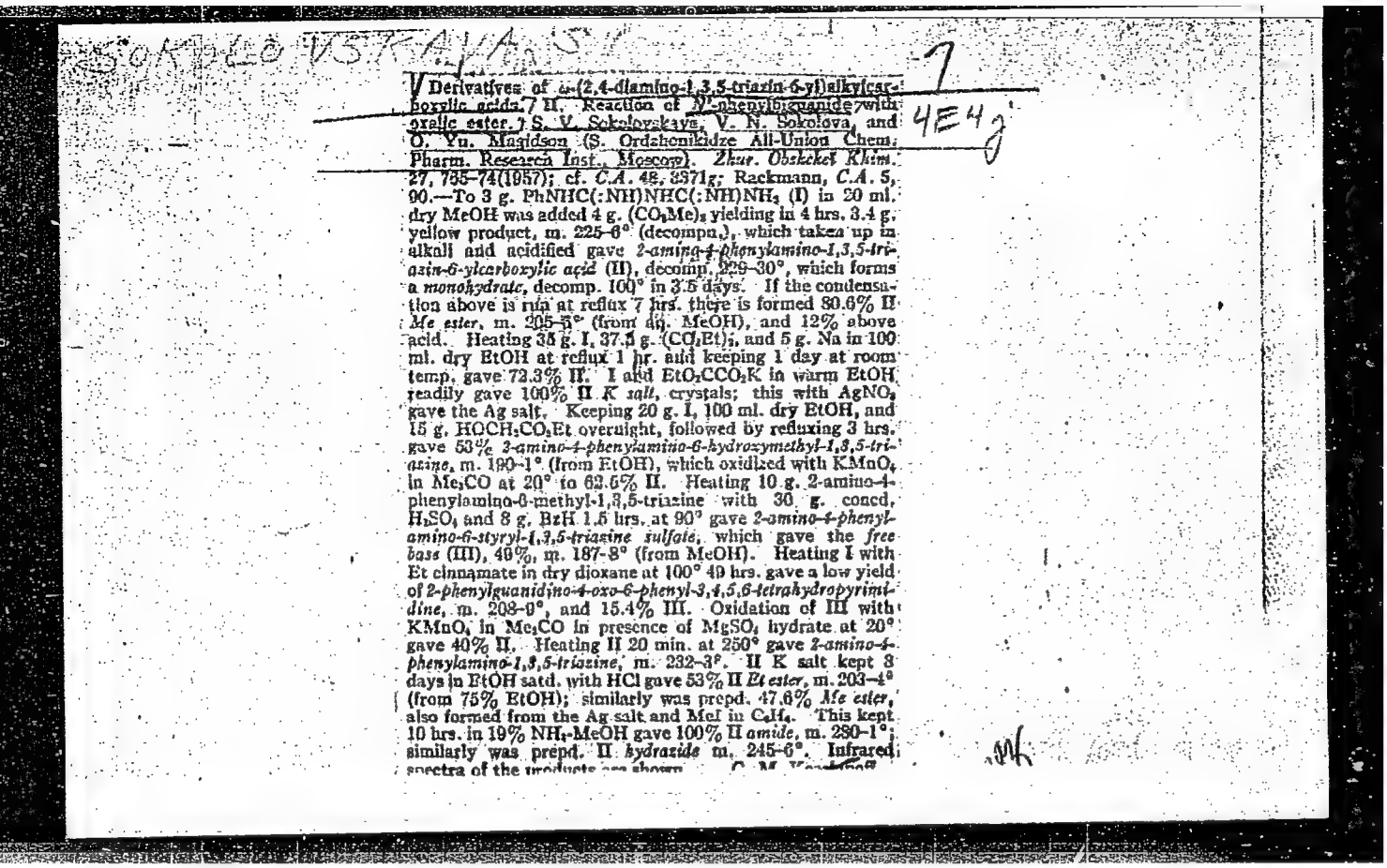
"Derivatives of 2, 4-diamino-1, 3, 5-Triazylalkylcarboxylic acids. Part 1."
Sokolovskaia, S. V., Sokolova, V. N., Magidson, O. IU. (p. 467)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1953, Volume 23, No.3.

SOLOVIEVA, S. V.

"Investigating the Series 2,4-Dialkino-1, 3, 5,-triazine and Its Alkyl Carboxylic Acids." Cand Chem Sci, All-Union Sci Res Chemicopharmaceutical Inst, Moscow, 1955. (KL, No 12, Mar 55)

So: Sum. No 670, 29 Sept 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)



Derivatives of ω-(2,4-diamino-1,3,5-triazin-6-yl)alkylcarboxylic acids. 7 II. Reaction of N'-phenylbiguanide with oxalic ester. 7 S. V. Sokolovskaya, V. N. Sokolova, and O. Yu. Magidson (S. Ordzhonikidze All-Union Chem. Pharm. Research Inst., Moscow). *Zhur. Obshchei Khim.* 27, 735–74(1957); cf. *C.A.* 48, 3971g; Rackmann, *C.A.* 5, 90.—To 3 g. PhNHC(:NH)NHC(:NH)NH$_2$ (I) in 20 ml. dry MeOH was added 4 g. $(CO_2Me)_2$ yielding in 4 hrs. 3.4 g. yellow product, m. 225–6° (decompn.), which takes up in alkali and acidified gave *2-amino-4-phenylamino-1,3,5-triazin-6-ylcarboxylic acid* (II), decomp. 229–30°, which forms a *monohydrate*, decomp. 100° in 3.5 days. If the condensation above is run at reflux 7 hrs. there is formed 80.6% II *Me ester*, m. 205–5° (from aq. MeOH), and 12% above acid. Heating 35 g. I, 37.5 g. $(CO_2Et)_2$, and 5 g. Na in 100 ml. dry EtOH at reflux 1 hr. and keeping 1 day at room temp. gave 72.3% II. I and EtO_2CCO_2K in warm EtOH readily gave 100% II *K salt*, crystals; this with $AgNO_3$ gave the Ag salt. Keeping 20 g. I, 100 ml. dry EtOH, and 15 g. $HOCH_2CO_2Et$ overnight, followed by refluxing 3 hrs. gave 53% *2-amino-4-phenylamino-6-hydroxymethyl-1,3,5-triazine*, m. 190–1° (from EtOH), which oxidized with $KMnO_4$ in Me_2CO at 20° to 62.6% II. Heating 10 g. 2-amino-4-phenylamino-6-methyl-1,3,5-triazine with 30 g. concd. H_2SO_4 and 8 g. BzH 1.5 hrs. at 90° gave *2-amino-4-phenylamino-6-styryl-1,3,5-triazine sulfate*, which gave the *free base* (III), 49%, m. 187–8° (from MeOH). Heating I with Et cinnamate in dry dioxane at 100° 49 hrs. gave a low yield of *2-phenylguanidino-4-oxo-6-phenyl-3,4,5,6-tetrahydropyrimidine*, m. 208–9°, and 15.4% III. Oxidation of III with $KMnO_4$ in Me_2CO in presence of $MgSO_4$ hydrate at 20° gave 40% II. Heating II 20 min. at 250° gave *2-amino-4-phenylamino-1,3,5-triazine*, m. 232–3°. II K salt kept 3 days in EtOH satd. with HCl gave 53% II *Et ester*, m. 203–4° (from 75% EtOH); similarly was prepd. 47.6% *Me ester*, also formed from the Ag salt and MeI in C_6H_6. This kept 10 hrs. in 19% NH_3-MeOH gave 100% II *amide*, m. 280–1°; similarly was prepd. II *hydrazide* m. 245–6°. Infrared spectra of the products are shown [illegible]

SOKOLOVSKAYA, S. V.

Distr: 4E4j

Derivatives of ω-(2,4-diamino-1,3,5-triazin-6-yl)alkylcarboxylic acids. III. Reaction of N'-phenylbiguanide with malonic ester. S. V. Sokolovskaya, V. N. Sokolova, and O. Yu. Magidson (S. Ordzhonikidze All-Union Chem. Pharm. Sci.-Research Inst., Moscow). *Zhur. Obshchei Khim.* 27, 1031-8(1957); cf. *C.A.* 51, 16493e.—Refluxing 10 g. $PhNHC(:NH)NHC(:NH)NH_2$ (I) with 9 ml. $CH_2(CO_2Et)_2$ in 20 ml. EtOH contg. 0.5 g. Na 6 hrs. followed by concn. and treatment with 20 ml. *N* NaOH gave an insol. residue of 9.2% *methylenebis(2-amino-4-phenylamino-1,3,5-triazin-6-yl)* (IA), m. 274–5°, and 22.7% *Et 2-amino-4-phenylamino-1,3,5-triazin-6-ylacetate* (II), m. 119–20°. The NaOH ext. acidified with AcOH to pH 6 gave 34.7% *2-phenylguanidino-4,6-diazopyrimidine* (IIA), m. 259–60° (H_2O), which is insol. in $NaHCO_3$, and 14.4% *2-amino-4-phenylamino-1,3,5-triazin-6-ylacetic acid* (III), decomp. 239–40° (aq. EtOH). Addn. of 30 g. $EtO_2CCH_2CO_2H$ in C_6H_6 to 70 g. PCl_5 in C_6H_6 at 15° yielded after stirring to complete evolution of HCl 88% EtO_2CCH_2COCl, b_{15} 72–3°. This (7.4 g.) was added gradually in C_6H_6 to 6 g. I and 7 g. powd. K_2CO_3 in C_6H_6 at 65° and refluxed 14 hrs. with a moisture trap separator for evolved H_2O; the mass was filtered and the filtrate on evapn. gave 37% II, while the insol. part was leached with H_2O and the ext. treated with AcOH to pH 6 yielding 30% III; the H_2O-insol. part

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Distr: 4E4j

S. V. Sokolovskaya, V. N. Sokolova

was 8% IA and 15% IIA, sepd. by crystn. from 80% EtOH. Refluxing 10 g. 2-cyanamino-4,6-dioxopyrimidine with 9.7 g. $PhNH_2.HCl$ in H_2O 6 hrs., filtration, and purification of the product through the Na salt gave 68.3% IIA, decomp. 259–60° (80% EtOH). Addn. to 25 g. I in 150 ml. dry EtOH of 24 g. $EtO_2CCH_2CO_2K$ in MeOH and refluxing 5 hrs. gave 45% III *K salt*, m. 256–60° (EtOH); which with AcOH (pH 5) gave III *monohydrate*, decomp. 100–2°; anhyd. III, decomp. 239–40°. III K salt and $AgNO_3$ gave III Ag salt, solid. Keeping 6 g. I and 5 ml. $NCCH_2CO_2Et$ in MeOH 30 hrs. gave 50% *2-amino-4-phenylamino-1,3,5-triazin-6-ylacetonitrile*, m. 152–3° (H_2O); *HCl salt*, m. 230–2°; the nitrile is sapond. to III in 1 hr. with hot 3% NaOH. Refluxing II with alc. NaOH 3 hrs. gave 80% III. Heating III monohydrate 1 hr. at 130–60° gave *2-amino-4-phenylamino-6-methyl-1,3,5-triazine*, m. 180–2°. III Ag salt and MeI in MeOH kept overnight gave 43% III *Me ester*, m. 121–2°. Shaking III Et ester with 19% NH_3 in MeOH 19 days gave 61% III *amide*, m. 203–4° (75% EtOH), also formed in 46.3% yield on heating III nitrile (1 g.) with 5 ml. 87% H_2SO_4 2 hrs. at 65–70°. III Et ester and $N_2H_4.H_2O$ in EtOH gave overnight 80% III *hydrazide*, m. 215–16° (EtOH).

G. M. Kosolapoff

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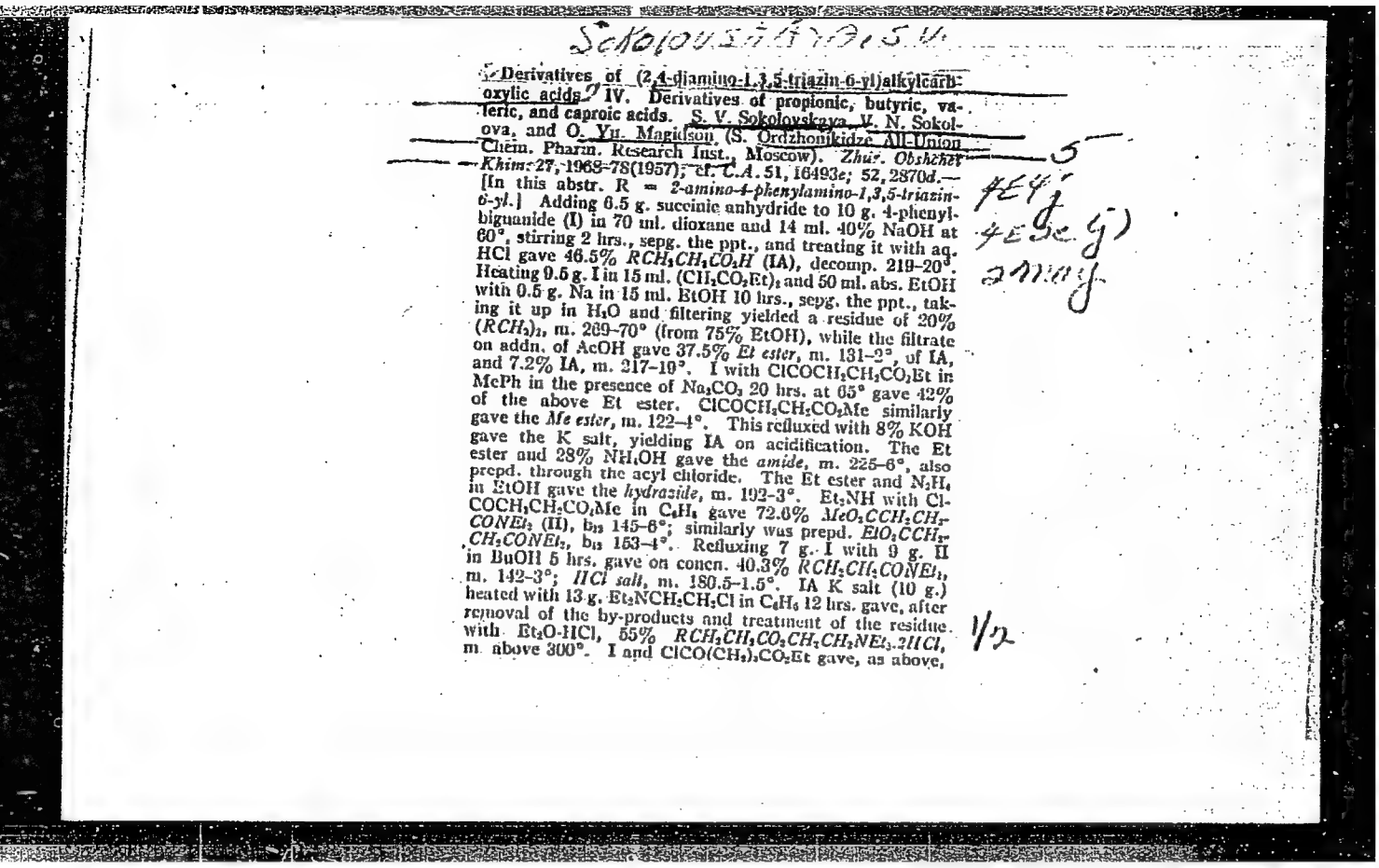

Sokolovskaya V.N.

Derivatives of (2,4-diamino-1,3,5-triazin-6-yl)alkylcarboxylic acids. IV. Derivatives of propionic, butyric, valeric, and caproic acids. S. V. Sokolovskaya, V. N. Sokolova, and O. Yu. Magidson (S. Ordzhonikidze All-Union Chem. Pharm. Research Inst., Moscow). *Zhur. Obshchei Khimii* 27, 1968–78(1957); cf. *C.A.* 51, 16493e; 52, 2870d.—[In this abstr. R = *2-amino-4-phenylamino-1,3,5-triazin-6-yl.*] Adding 6.5 g. succinic anhydride to 10 g. 4-phenylbiguanide (I) in 70 ml. dioxane and 14 ml. 40% NaOH at 60°, stirring 2 hrs., sepg. the ppt., and treating it with aq. HCl gave 46.5% $RCH_2CH_2CO_2H$ (IA), decomp. 219–20°. Heating 0.5 g. I in 15 ml. $(ClH_2CO_2Et)_2$ and 50 ml. abs. EtOH with 0.5 g. Na in 15 ml. EtOH 10 hrs., sepg. the ppt., taking it up in H_2O and filtering yielded a residue of 20% $(RCH_2)_2$, m. 269–70° (from 75% EtOH), while the filtrate on addn. of AcOH gave 37.5% *Et ester*, m. 131–2°, of IA, and 7.2% IA, m. 217–19°. I with $ClCOCH_2CH_2CO_2Et$ in MePh in the presence of Na_2CO_3 20 hrs. at 65° gave 42% of the above Et ester. $ClCOCH_2CH_2CO_2Me$ similarly gave the *Me ester*, m. 122–4°. This refluxed with 8% KOH gave the K salt, yielding IA on acidification. The Et ester and 28% NH_4OH gave the *amide*, m. 225–6°, also prepd. through the acyl chloride. The Et ester and N_2H_4 in EtOH gave the *hydrazide*, m. 192–3°. Et_2NH with $ClCOCH_2CH_2CO_2Me$ in C_6H_6 gave 72.6% $MeO_2CCH_2CH_2CONEt_2$ (II), b_{13} 145–6°; similarly was prepd. $EtO_2CCH_2CH_2CONEt_2$, b_{13} 153–4°. Refluxing 7 g. I with 9 g. II in BuOH 5 hrs. gave on concn. 40.3% $RCH_2CH_2CONEt_2$, m. 142–3°; *HCl salt*, m. 180.5–1.5°. IA K salt (10 g.) heated with 13 g. $Et_2NCH_2CH_2Cl$ in C_6H_6 12 hrs. gave, after removal of the by-products and treatment of the residue with Et_2O-HCl, 55% $RCH_2CH_2CO_2CH_2CH_2NEt_2.2HCl$, m. above 300°. I and $ClCO(CH_2)_2CO_2Et$ gave, as above,

SOROLOVSKAYA, S.V.; SOROLOVA, V.N.; MAKAROV, O.Yu.

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4E4j
4E2cj)
2 May

68% $R(CH_2)_4CO_2Et$, m. 106.5–108°, and 21% *free acid*, m. 208.5–9.5°; I and $CH_2(CH_2CO_2Et)_2$ heated with EtONa in EtOH 6 hrs. gave 20.6% $CH_2(CH_2R)_2$, m. 234–5° (from 75% EtOH), and 6% above free acid, $R(CH_2)_4CO_2H$, m. 208–9°, along with 38.8% above Et ester, m. 106.5–108°. The latter heated 3 hrs. with 8% alc. KOH gave the free acid, m. 208.5–9.5° (from 75% EtOH); the Et ester and 25% NH_4OH in 15 days gave the *amide*, m. 179.5–80.5° (from 75% EtOH); the Et ester and N_2H_4 in EtOH gave 91.2% *hydrazide*, m. 208–9° (from 75% EtOH). I heated with di-Et adipate in the presence of EtONa in EtOH 4 hrs. gave 25.6% $R(CH_2)_4CO_2Et$, m. 128–7°, 22.5% $R(CH_2)_4R$, m. 229–30° (*di-HCl* salt, m. 226–8°), and 17% $R(CH_2)_4CO_2H$, m. 206–7°. The latter formed in 67.4% yield by condensation, as above, of I with $EtO_2C(CH_2)_4COCl$, along with some free acid. The *Et ester* forms the *mono-*, m. 165–6°, and *di-Ac deriv.*, m. 90–1°. The *free acid* forms the *HCl salt*, decomp. 220.5–22° (from abs. EtOH). The free acid heated with MeOH in the presence of H_2SO_4 4 hrs. gave 95% *Me ester*, m. 122–3.5°. The Et ester and N_2H_4 in EtOH gave 70% *hydrazide*, m. 169–70°. The Et ester and MeOH-NH_3 in 20 days gave 83% amide, m. 195–6°, also prepd. from the free acid by treatment with PCl_5-AcCl and isolation of the acyl chloride, a red resin, which with NH_4OH gave 81% of the above amide. I and $EtO_2C(CH_2)_3COCl$, as above, gave 72% $R(CH_2)_3CO_2Et$, m. 87.5–9.5°, sapond. with 5% alc. NaOH to 87% *free acid*, m. 177.5–8°. The Et ester gave the 80% *amide*, m. 164–5°, and 79% *hydrazide*, m. 194.5–96° as above described. The thermal stability of the free acids in the above group tends to rise with increase of the alkyl chain. Spectroscopic data show that the acids exist not only in the form of zwitter-ions but also as free acids, the salt formation decreasing with increased chain length. The products showed little, if any, biol. activity. G. M. Kosolapoff

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FATALIYEV, Khalil' Magomedovich[deceased]; NOVOSEL'TSEV, K.A., red.; SAFONOV, Yu.F., red.; SIVOKON', P.Ye., red.; SOKOLOVSKAYA, T.A., red.; LAZAREVA, L.V., tekhn. red.

[Marxism-Leninism and the natural sciences]Marksizm-leninizm i estestvoznanie. Red. kollegiia: K.A.Novosel'tsev, IU.F.Safonov, i P.E.Sivokon'. Moskva, Izd-vo Mosk.univ., 1962. 351 p. (MIRA 15:9)

1. Sotrudniki kafedry dialekticheskogo i istoricheskogo materializma estestvennykh fakul'tetov Moskovskogo gosudarstvennogo universiteta (for Novosel'tsev, Safonov, Sivokon').
(Communism and science)

IVANOV, Sergey Zakharovich, prof., doktor tekhn. nauk; SOKOLOVSKAYA, T.A., red.; ZARSHCHIKOVA, L.N., tekhn. red.

[Complex processing of granulated sugar]Kompleksnaia pererabotka sakhara-peska. Moskva, Pishchepromizdat, 1962. 66 p. (MIRA 15:11)

(Sugar manufacture)

SOKOLOVSKAYA, T.B.

Nature of the epiblast. Bot. zhur. 50 no.12:1686-1693 D '65.
(MIRA 19:2)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

[illegible]

[illegible] K. A., I. [illegible] and [illegible], T. [illegible] "A new type of sticky Olympus", in the collection: Voprosy [illegible], Obshche. i Eksperim. parazitologii, Vol. [illegible], Moscow, 1947, [illegible] 25-[illegible].

SO: U-1393, 17 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1947).

L 17778-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS AFFTC/ASD Ps-4/Pc-4/Pr-4
RM/WW/MAY

ACCESSION NR: AP3005854 S/0051/63/015/002/0274/0280 76 72

AUTHOR: Averina, L.N.; Kerner, B.I.; Nikulina, R.A.; Sokolovskaya, T.I.; Tsirlin, Yu.A.

TITLE: Light collection in scintillators

SOURCE: Optika i spektroskopiya, v.15, no.2, 1963, 274-280

TOPIC TAGS: scintillator , light collection, scintillator design

ABSTRACT: Expressions are derived for the light collecting coefficient τ of a cylindrical scintillator with polished surfaces and no packaging. The light-collecting coefficient is defined as the ratio of the radiant energy emerging through one face of the scintillator and entering the photomultiplier to the total energy produced by the scintillations in the volume of the scintillator with an absorption coefficient k and an index of refraction n. Knowledge of τ is obviously important for designing efficient scintillators and evaluating their overall efficiency. Fresnel reflection from the glass face of the photomultiplier tube is taken into account (reflections from the top and bottom ends of the cylinder compensate each other). The results of calculations by means of the deduced formulas were compared with experiment in two ways: 1) modelling, using a plexiglas cup filled with

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ACCESSION NR: AP3005854

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glycerol into which there was lowered a glass sphere with a persistent phosphor, and 2) measurements with standard plastic scintillators (polystyrene + terphenyl + + POPOP) 20 mm in diameter and of different heights, irradiated from an alpha-particle source. The experimental variation of τ with the height of the scintillator cylinder is consistont with the calculated dependence. Thus, the deduced formulas can be used for qualitative design calculations as well as for quantitative evaluations if the basic parameters of the scintillator material are known. We thank L.L.Nagornaya for supplying the optical characteristics of the plastic and V.L.Timan for programming the necessary computations on a computer." Orig.art.has: 28 formulas and 8 figures.

ASSOCIATION: none

SUBMITTED: 20Oct62 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 005 OTHER: 002

Card 2/2

M

Country : USSR
Category: Cultivated Plants. Ornamental.

Abs Jour: RZhBiol., No 11, 1958, No 49171

Author : Zotov, V.V.; Sokolvskaya, T.I.
Inst : -
Title : Decorating Houses and Personally Owned Plots with Grape Vines.

Orig Pub: Sadovodstvo, vinogradarstvo i vinodeliye Moldavii, 1957, No 3, 61-63

Abstract: In Moldavia the most suitable grape varieties for arbor and wall cultures are the Lydia Isabella and certain direct producers: Zaybel 1, 1001, Kuderk 71-20, Noah and others, which tolerate frost rather well and do not require covering in winter. These varieties grow on their own stocks and do not need

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M-190

ZOTOV, V.V.; SOKOLOVSKAYA, T.I.

Different tannin forms in roots of healthy and phylloxera-infested grapevines. Biokhim.pl. i ovoshch. no.5:195-203 '59. (MIRA 13:1)

1. Vsesoyuznaya nauchno-issledovatel'skaya protivofilloksernaya stantsiya (g.Odessa)
(Grapes--Diseases and pests) (Phylloxera) (Tannins)

ZOTOV, V.V.; SOKOLOVSKAYA, T.I.

Quantitative changes in the protein fractions of phylloxera-infested grape roots. Biokhim.pl.i ovoshch. no.6:96-99 '61. (MIRA 14:6)

1. Vsesoyuznaya nauchno-issledovatel'skaya protivofilloksernaya stantsiya.
(Grapes---Disease and pest resistance) (Proteins) (Phylloxera)

L 16689-65 EWG(j)/EWT(m)/EPF(c)/EWP(j)/EWA(h)/EWA(1) Pc-4/Pr-4/Peb
ESD(t)/ESD(gs)/ASD(a)-5 RM
ACCESSION NR: AR5000772 S/0058/64/000/010/A040/A041

SOURCE: Ref. zh. Fizika, Abs. 10A379 B

AUTHORS: Tsirlin, Yu. A.; Sokolovskaya, T. I.; Shishova, L. N.

TITLE: Some problems of light gathering in plastic scintillators 15

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy, vyp. 3, Khar'kov, Khar'kovs. un-t, 1963, 56-62

TOPIC TAGS: scintillator, absorption coefficient, light yield, polystyrene, terphenyl

TRANSLATION: Questions involving the light gathering ability of cylindrical plastic scintillators are discussed. Analytic expressions are obtained for the light flux I passing through one of the plane boundaries of the scintillator, as a function of its dimensions, the absorption coefficient, and the refractive index. The expressions

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obtained were verified experimentally. The cylinders used were made of a scintillating plastic based on polystyrene to which terphenyl and POPOP was added. The source was a Po^{210} compound. The experimental data are in good agreement with the calculations. The formulas obtained can be used to determine the absolute light yield of the scintillator and to compare the quality of cylindrical scintillators of identical composition and different dimensions. Ya. M.

ENCL: 00

SUB CODE: NP, OP

ACCESSION NR: AP4041055 S/0120/64/000/003/0214/0214

AUTHOR: Tsirlin, Yu. A.; Zalyubovskiy, I. I.; Sokolovskaya, T. I.; Neznamov, V. G.; Nikulina, R. A.

TITLE: Light response of CsI(Tl) crystal to proton and deuteron energy

SOURCE: Pribory* i tekhnika eksperimenta, no. 3, 1964, 214

TOPIC TAGS: CsI(Tl) crystal, CsI(Tl) crystal light response, proton energy, deuteron energy

ABSTRACT: The light response of CsI(Tl) crystals was measured in the 10—100 kev range on a Kharkov State University kevatron. The response P to protons was found to be lower than the response D to deuterons, the ratio D:P being about 1.3. The nonlinear segment of the curve lies below 25 kev. Orig. art. has: 1 figure.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy institut monokristallov (All-Union Scientific-Research Institute of Single Crystals)

SUBMITTED: 05Jun63 ENCL: 0(

SUB CODE: NP NO REF SOV: 000 OTHER: 003

Card 1/1

L 8213-66 EWT(l)/EWT(m)/EWP(j)/EWA(h)/EWA(l) IJP(c) WW/GG/RM

ACC NR: AP5013864 SOURCE CODE: UR/0368/65/002/004/0371/0373

44,55 44,55 44,55 44,55

AUTHOR: Tsirlin, Yu. A.; Daych, A. R.; Sokolovskaya, T. I.; Nagornaya, L. L.

ORG: none

TITLE: Determining the effective coefficient of light absorption in long plastic scintillators

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 4, 1965, 371-373

21, 44,55

TOPIC TAGS: scintillator, light absorption, gamma luminescence, luminescent material

ABSTRACT: It is shown that the attenuation in the scintillator material of light emitted by that scintillator may be determined only by measuring the luminescence spectrum, spectral sensitivity of the photocathode which detects the radiation, and spectral coefficient of absorption of the scintillator material throughout the entire range of wavelengths emitted by the scintillator. An experimental method is described for direct determination of the "effective" coefficient of absorption. The transmittance of α-stimulated light is measured in long cylinders of scintillation plastic. In a second set of experiments, the transmittance of light stimulated by a collimated beam of γ-rays is measured. The results are given in graphic form. A formula is derived for the transmission factor as a function of length. Orig. art. has: 3 figures, 5 formulas.

SUB CODE: OP,MT/ SUBM DATE: 16Sep64/ ORIG REF: 006/ OTH REF: 000

UDC: 535.344

Card 1/1

L 65229-65 EPF(c)/EWT(l)/EWT(m)/EWP(j) IJP(c) RM

ACCESSION NR: AP5021490 UR/0368/65/003/002/0156/0161 32 30
535.344

AUTHOR: Tsirlin, Yu. A.; Sokolovskaya, T. I.; Nikulina, R. A.; Nagornaya, L. L.

TITLE: Luminescence yield of plastic scintillators as a function of external electron energy

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 2, 1965, 156-161

TOPIC TAGS: scintillator, polystyrene, thermoplastic material, luminescent material

ABSTRACT: The luminescence yield L of various plastic scintillators was studied as a function of electron beam energy E. The measurements were made on the apparatus shown schematically in fig. 1 of the Enclosure. An electron beam from source 1 is accelerated in tube 2 to an energy of 70 kev and falls on the plastic scintillator 6 which is mounted on an FEU-13 photomultiplier placed in a vacuum chamber. The beam is irised down twice on its path to a final spot size of 3 mm on the specimen. More light was collected by using aluminum reflector 5. The plastic scintillators studied were divided into the following four groups: 1) with different

Card 1/2

L 65229-65

ACCESSION NR: AP5021490 2

bases and identical primary and secondary additives in optimum concentrations for the given base; 2) with the same base but with various primary additives in optimum concentrations; 3) with the same base and the same primary additive in various concentrations; 4) with identical bases and identical primary additives, but different secondary additives. Plastic scintillators from these groups were made in the form of polished cylinders 18 mm in diameter and 2 mm high. The results are tabulated and also given graphically. The luminescence yield of these plastic scintillators is not proportional to the external electron energy, and the specific light output L/E is a variable in the low energy range from 0 to 70 kev. It was found that polyvinyl xylene and polystyrene bases are nearly identical in their degree of proportionality, which is higher than that of a polyvinyl toluene base (see fig. 2a of the Enclosure). The proportionality factor depends on the type and concentration of the primary additive (see figs. 2b and 3 of the Enclosure). Secondary additives have only a slight effect on the degree of proportionality: $3P\text{-}\Delta^2$ is somewhat more effective (see fig. 2 and table 1 of the Enclosure). Orig. art. has: 4figures, 2 formulas, 1 table.

ASSOCIATION: none

SUBMITTED: 24Aug64 ENCL: 05 SUB CODE: OP, NP

NO REF SOV: 005 OTHER: 005

Card 2/7

L 65229-65

ACCESSION NR: AP5021490 ENCLOSURE: 01

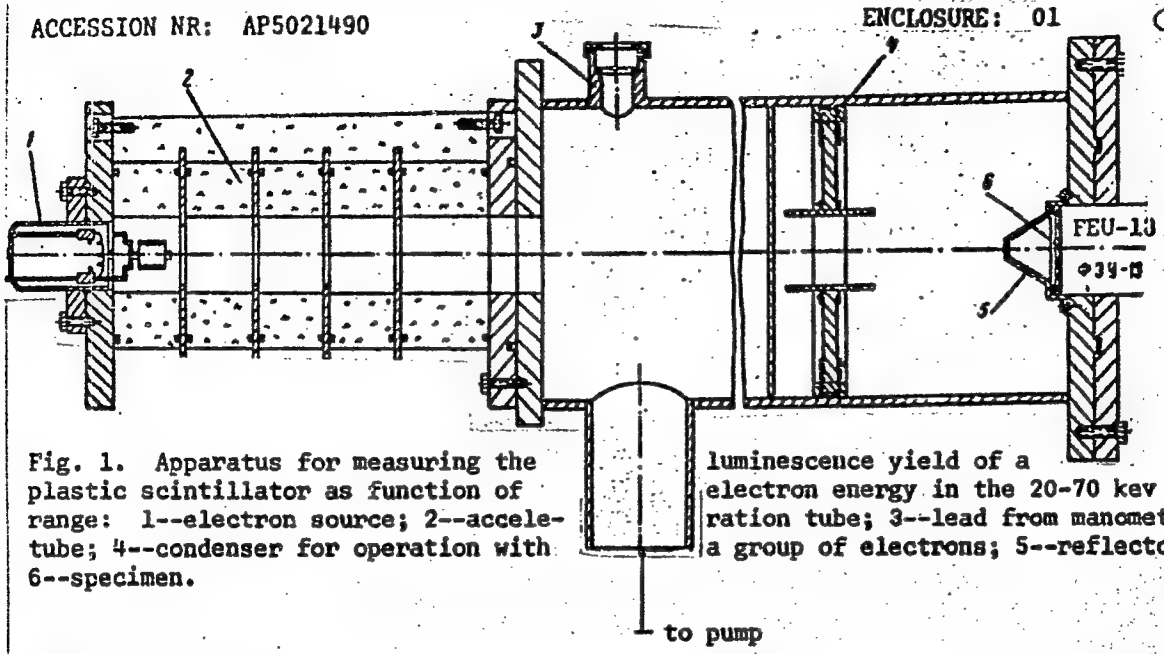

Fig. 1. Apparatus for measuring the luminescence yield of a plastic scintillator as function of electron energy in the 20-70 kev range: 1--electron source; 2--accelerator tube; 3--lead from manometer tube; 4--condenser for operation with a group of electrons; 5--reflector; 6--specimen.

Card 3/7

L 65229-65

ACCESSION NR: AP5021490 ENCLOSURE: 02

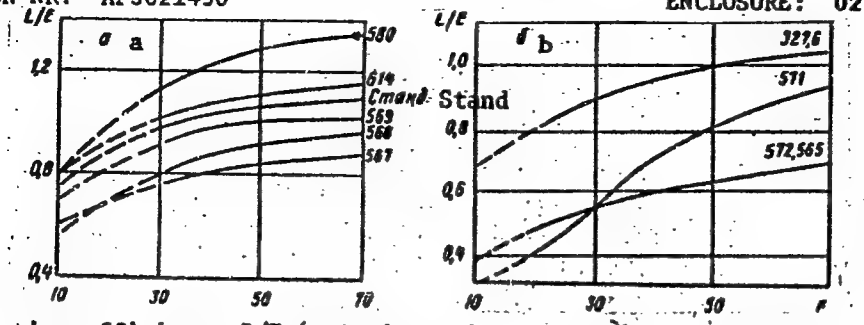

Fig. 2

Scintillation efficiency L/E (relative units per kev) as a function of electron energy E (kev): a--plastic scintillators in groups I and IV (No 580--polyvinyl toluene base + 2% PPP+0.1% POPOP; No 614--polyvinyl xylene base + 2% PPP + 0.1% POPOP; standard--polystyrene base + 2% PPP + 0.1% POPOP; No 569--polystyrene + 2% PPP + + 3P-Δ^2; No 568--polystyrene + 2% PPP + BPO; No 567--polystyrene + 2% PPP + BBE); b--plastic scintillators with polystyrene bases and various primary additives in optimum concentrations: (No 327--PPP; No 6--BaNE; No 571--BPO; No 565--2DF; No 572--PPO)

Card 4/7

L 65229-65

ACCESSION NR: AP5021490 ENCLOSURE: 03

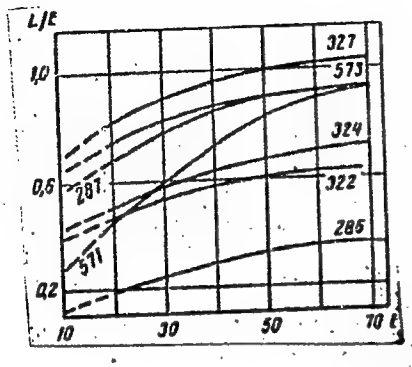

Fig. 3. Scintillation efficiency *L/E* (relative units per kev) as a function of electron energy *E* (kev) in polystyrene-based plastic scintillators with various concentrations of BPO and PPP as primary additives (group III): No 287--0.5% BPO; No 571--1.5% BPO; No 286--0.1% BPO; No 573--2% PPP; No 327--1.5% PPP; No 324--1.0% PPP; No 322--0.5% PPP

Card 5/7

L 65229-65

ACCESSION NR: AP5021490 ENCLOSURE: 04

Table 1 Plastic scintillator characteristics

Group No	Chemical composition of the plastic scintillator **	Degree of proportionality, %
I	Polystyrene + 2% PPP + 0.1% POPOP	68
	Polyvinyl xylene + 2% PPP + 0.1% POPOP	70
	Polyvinyl toluene + 2% PPP + 0.1% POPOP	59
II	Polystyrene + 1.5% PPP	66.5
	Polystyrene + 1.5% 2DF	57
	Polystyrene + 1.5% BPO	32
	Polystyrene + 1.5% PPO	58.5
	Polystyrene + 1.5% BaNE	65.5
III	Polystyrene + 0.1% BPO	40
	Polystyrene + 0.5% BPO	59
	Polystyrene + 1.5% BPO	32
	Polystyrene + 0.5% PPP	62
	Polystyrene + 1% PPP	61.5
	Polystyrene + 1.5% PPP	67
	Polystyrene + 2% PPP	68.5
	Polystyrene + 2% PPP + 0.1% POPOP	68
	Polystyrene + 2% PPP + 0.1% BBO	67.5
	Polystyrene + 2% PPP + 0.1% 3P-Δ^2	77
Card 6/7	Polystyrene + 2% PPP + 0.04$ BBE	68

L 65229-65

ACCESSION NR: AP5021490 ENCLOSURE: 05

**PPP--*p*-terphenyl; POPOP--1,4-di-(5-phenyl)-oxazolyl-1,3-benzene; DF--2-(diethyl-phenyl ether)-5-phenyl-oxadiazole-1,3,4; BPO--2-phenyl-5-(4-biphenyl)-oxazole-1,3; PPO--2,5-diphenyl-oxazole-1,3; BBO--2,5(*p*-biphenyl)-oxazole-1,3; 3P-Δ^2--1,3,5--triphenyl-pyrozolin; BBE--1,2-di-(4-biphenyl)-ethylene; BaNE--1-(4-biphenyl)-2--(α-naphthyl)-ethylene

Card 7/7

L 15958-66 EWT(m)/EWP(j)/T WW/RH

ACC NR: AP6001485 SOURCE CODE: UR/0368/65/003/006/0571/0573

AUTHOR: Tsirlin, Yu. A.; Sokolovskaya, T. I.; Nikulina, R. A; Nagornaya, L. L. Malkes, L. Ya.; Shubina, L. V. 55

ORG: None

TITLE: Plastic scintillator with a light yield proportional to the energy of outer electrons

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 6, 1965, 571-573

TOPIC TAGS: scintillation, polystyrene, vinyl plastic, electron emission

ABSTRACT: Earlier studies of plastic scintillators investigated the relationship between the light yield and the energy of inner (I. M. Rozman et al., PTE, 6, 27, 1960) and outer (Yu. A. Tsirlin et al., ZhPS, 3, 156, 1965) electrons. The present study attempts to establish the amount of additives (PBE, BPO, or PPP) which will result in the highest degree of proportionality defined as $(L/E)_{30\ kev}/(L/E)_{70kev}$ 100 (L - light yield, E - incident energy). The polystyrene + 1% PBE showed the highest light yield in the 0—20 kev region and it was, at the same time, proportional to the energy of the outer electrons. It is thus very convenient for the detection of low energy electrons. The other base tested was polyvinylxylene

Card 1/2 UDC: 535.35

L 15958-66
ACC NR: AP6001485

which yielded a somewhat weaker degree of proportionality. Orig. art. has 1 formula, 2 figures, and 2 tables.

SUB CODE: 07 / SUBM DATE: 02Nov64 / ORIG REF: 002

18/

bvk
Card 2/2

SOKOLOVSKAYA, V.A.; PRIKHOD'KO, L.F. (Dnepropetrovsk)

Treatment of chronic cholecystitis and cholecystoangiocholitis. (MIRA 14:3)
Vrach. delo no.2:63-65 F '61.
(GALL BLADDER--DISEASES)

PEREL'MUTER, D.L.; SOKOLOVSKAYA, V.G. (Yevpatoriya)

Effect of "Moinaki" mineral water on the secretory and evacuatory function of the stomach. Vrach. delo no.8: 127-128 Ag '63. (MIRA 16:9)

1. Sanatoriy "Primor'ye" Yevpatoriyskogo territorial'nogo kurortnogo upravleniya professional'nych soyuzov, (nauchnyy rukovoditel' - prof. M.V.Kokhanovich).
(YEVPATORIYA—MINERAL WATERS) (STOMACH—SECRETIONS)

SOKOLOVSKAYA, V.I.

Disease caused by Salmonella london, author's abstract. Zhur. mikrobiol.epid. i immun. 29 no.2:108-109 F '58. (MIRA 11:4)

1. Iz kafedry infektsionnykh bolezney Kiyevskogo instituta usovershenstvovaniya vrachey.
(SALMONELLA INFECTIONS, case reports,
london (Rus)

SOKOLOVSKAYA, V.I.

Species of dysentery pathogens. Zhur.mikrobiol.epid. i immun. 30 no.5:137 My '59. (MIRA 12:9)

1. Iz Kiyevskogo instituta usovershenstvovaniya vrachey.
(SHIGELLA)

SOKACHEV, V.N., akademik; SOKOLOVSKAYA, V.A.

Likhvin interglacial flora in the surrounding area of Moscow.
Dokl. AN SSSR 165 no.1:194-197 N '65. (MIRA 18:10)

SOKOLOVSKAYA, V.V.

360 Protivokorrozionnyye pokrytiya rezhushchego instrumentz dlya dlitel' nogo khyaneniya i transportirovki. M., Ts. Bti, 1954. 36s. 21sm. (M-vo stankostroit. i instrum. prom-sti SSSR. Usesoyuz. Nauch.-issled. instrum. in-t VNII). 1.000 ekz Bespl.- Aur. ralraborki ukazan na oborote tit. l. - (54.55434) p

621.91.02 & 620.197

So: Knizhaya, Letopis, Vol. 1, 1955

MALININA, K.A.; SMOL'NIKOV, Ye.A.; SUYETOV, A.P.; BADAYEVA, A.A.; LUNEVA, Z.S.; KUKOLEV, V.V.; SOKOLOVSKAYA, V.V.; LEBEDEVA, Ye.A.; UVAROVA, A.F., tekhn.red.

[Technological operations in the manufacture of metal-cutting tools; instructions] Tekhnologiia izgotovleniia metallorezhushchikh instrumentov; rukovodiashchie materialy. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry. No.7. [Heat treatment] Termicheskaia obrabotka. 1960. 127 p. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy instrumental'nyy institut. 2. Termicheskaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo instrumental'nogo instituta (for all, except Uvarova). (Metal-cutting tools) (Metals--Heat treatment)

S/121/60/000/008/010/012
A004/A002

AUTHORS: Rudnev, A. V., Sokolovskaya, V. V.

TITLE: Fastening Ceramic Tool Bits With Heat- and Vibration-Resisting Glues

PERIODICAL: Stanki i instrument, 1960, No. 8, pp. 33-35

TEXT: The authors point out that gluing of ЦМ-332 (TsM-332) ceramic tool bits to the holder has some advantages compared to the drawbacks of fastening the bit to the holder by soldering, welding or mechanical clamping. Gluing does not require metallization and does not affect the physical and mechanical properties of the materials to be glued. Investigations were carried out at VNII in order to select the glues which are most suitable for this purpose. The "ВС-350" (VS-350), "ВС-10" (VS-10T) and "ВК-32-200" (VK-32-200) cements with a phenol-rubber base and glues based on "ЭД-6" (ED-6) cold and thermosetting epoxy resins (ВПУ УХТИ (VTU UKhP) No. 77-58) were analyzed. The strength of glued unions was checked by gluing TsM-332 ceramic bits of shape 0227 to steel squares. The tests were carried out with the 30-ton Pishle machine. A table shows the test results. Based on the investigations carried out, the authors state the following: 1. The maximum temperature of the glue layer in tools with ceramic bits does not exceed

Card 1/2

S/121/60/000/008/010/012
A004/A002

Fastening Ceramic Tool Bits With Heat- and Vibration-Resisting Glues

125°C. The heat resistance of the VS-10T, VS-350, VK-32-200 cements and of the ED-6 thermosetting glue ensures a reliable fastening of the TsM 332 bit to the tool holder. 2. Gluing ceramic bits to the tool holder is expedient for finishing and semi-finishing operations. 3. The best results were obtained with the VS-10T and VS-350 cements. 4. Gluing bits to holders with open grooves does not warrant stability, therefore tool holders with semi-enclosed grooves should be used. 5. Tools with glued-on ceramic bits are easily reground. 6. At a temperature of 400°C, the glued-on bit comes off and the holder. After having been sandblast-treated it can be used again. 7. The gluing strength depends on the conditions, established by the gluing technology, being observed. A description of the technological process of gluing TsM 332 tool bits to the holder is given. There are 5 figures, 1 table and 9 references: 3 Soviet, 2 German, 4 American and English.

Card 2/2

Takalovskaya Ya. I.

VAL'DMAN, A.A.; SOKOLOVSKAYA, Ya.I.

"Paratyphoid diseases caused by group C pathogens Salmonella" by E.S. Gurevich. Reviewed by A.A. Val'dman, Zhur.mikrobiol.epid. i immun. no.1:149-151 Ja '58. (MIRA 11:4)
(PARATYPHOID FEVER) (GUREVICH, E.S.)

SOKOLOVSKAYA, Ya.I.; KOZLOVA, A.A.; SMIRNOVA, S.A.; KRYLOVA, O.M.; GLAZKOVA, T.S.; ALEKSANDROVA, V.R.; KAPETANAKI, K.G.

Viacheslav Viktorovich Kosmachevskii; on his 75th birthday. Zhur. mikrobiol., epid.i immun. 33 no.4:154-155 Ap '62. (MIRA 15:10)
(KOSMACHEVSKII, VIACHESLAV VIKTOROVICH, 1887-).

PESHETKINA, N.I.; YAKUBOV, Kh.; SLAVIN, B.A.; POSTNOV, Yu.V.; SOKOLOVSKAYA, Ye.A.; UMAROV, A.; BALCH, V.A.

Construction of vertical drainage in the Golodnaya Steppe. Mat. po proizv. sil. Uzb. no.15:281-306 '60. (MIRA 14:8)

1. Institut vodnykh problem i gidrotekhniki AN UzSSR; Uzbekskiy gidrogeologicheskiy trest i Glavgolodnostepstroy.
(Mirzachul' region--Drainage)

SOKOLOVSKAYA, Ye.I.

On permissible magnitude of altitude errors on topographic plans with 1:5000 and 1:2000 scale. Geod. i kart. no.3:49-51 Mr '57. (Topographical surveying) (MIRA 10:8)

SOKOLOVSKAYA, Ye.I.

Stereotopographic surveying on a scale of 1:2,000. Trudy Lab. aerometod. 7:131-134 '59. (MIRA 13:1)

1. Vsesoyuznyy topografo-marksheyderskiy trest (Soyuzmarkshtrest).
(Aerial photogrammetry)

S/006/60/000/05/09/024
B007/B123

AUTHOR: Sokolovskaya, Ye. I.

TITLE: Once More the Tolerable Height Error of Plans of Plane Terrain Sections on Large Scales (Is Discussed)

PERIODICAL: Geodeziya i kartografiya, 1960, No. 5, pp. 37-39

TEXT: In this article it is investigated what degree of accuracy of the plans with respect to the height is guaranteed by the various methods of topographic surveying. Investigations of K. K. Skidanenko, Ye. G. Larchenko, and Bakhman are mentioned. Based on experimental investigations of the TsNIIGAiK (Central Scientific Research Institute of Geodesy, Aerial Surveying and Cartography) (N. A. Sokolov) of plane tabling on a scale of 1 : 2000 with a contour line interval of 1 m, a mean error of $m_h = \pm 0.25$ m of the determination of heights was obtained. The heights were calculated in respect to the horizontal lines of a map of a plane terrain section. Therefore the maximum error is 0.40 to 0.80 m. In the Table shown in this article the mean error m_h is recorded according to the data of the TsNIIGAiK, Geotopos"yemka (g. Kiyev) (Geotopos"yemka, City of Kiyev).

Card 1/3

Once More the Tolerable Height Error of Plans of Plane Terrain Sections on Large Scales (Is Discussed)

S/006/60/000/05/09/024
B007/B123

MO Soyuzmarkshtrest and LO Soyuzmarkshtrest for compiling maps on a scale of 1 : 2000 of plane terrain sections with a contour line interval of 1 m by means of the stereotopographic method. Here, the maximum error is 0.5-0.6 m. In the thesis of A. S. Kurochkin 1957, at the Institut zemleustroystva (Land Surveying Institute) "Combined Survey of the Relief of Villages for Compiling Maps on a Scale of 1 : 2000" ("Kombinirovannaya s"yemka rel'yefa naselennykh punktov dlya sostavleniya planov v masshtabe 1 : 2000") a careful investigation of the accuracy of topographic surveying by the method of geometrical leveling of areas is made. In the work of I. G. Viduyev "Planning the Relief" and in the thesis of S. V. Vznuzdayev, 1955, "Accuracy of Horizontal Lines in the Maps on a Scale of 1 : 2000 for Planning Villages", a detailed analysis was given of the sources of the errors of which the total error of the topographic map with respect to the height is composed. It is shown that the accuracy of a topographic map depends not only on the instruments used in the survey but also on the geomorphology and the topographic ruggedness of the terrain. Based on the data given it is desired that the specifications be altered with respect to the tolerable error of the height determination

Card 2/3

Once More the Tolerable Height Error of Plans of Plane Terrain Sections on Large Scales (Is Discussed)

S/006/60/000/05/09/024
B007/B123

in maps on a scale of 1 : 5000 and/or 1 : 2000 for plane regions. Not the maximum error but the mean error should equal one third of the contour interval. This question was already raised in this periodical (Ref., footnote on p. 39). With a positive solution of this problem the costs of a topographic survey could be reduced considerably. Instead of the terrestrial and the combined method the more economical and up-to-date stereotopographic method could be used in compiling maps. There are 1 table and 2 Soviet references.

Card 3/3

SOKOLOVSKAYA, Ye.I.

Investigating the possibility of vertical control densification on the multiplex in large-scale surveys. Geod. i kart. no.8:29-31 Ag '60. (MIRA 13:10)

(Aerial photogrammetry)

NAZARETYAN, Ye.L.; SOKOLOVSKAYA, Ye.M.; PRISS, I.S.; VALUYSKAYA, Ye.N.

Practical significance of general work of the epidemiology squad and the therapeutic section of a polyclinic in the early detection of Botkin's disease. Sov.med. 20 no.12:33-37 D '56. (MLRA 10:1)

1. Iz laboratorii deystvitel'nogo chlena Akademii meditsinskikh nauk SSSR prof. Ye.M.Tareyeva, poliklinika No.10 Shcherbakovskogo rayona Moskvy i Instituta virusologii Akademii meditsinskikh nauk SSSR.

(HEPATITIS, INFECTIOUS, diag.
early diag.)

BOKOLO, Ye. M.

A BOKOLO, Ye. M. -- "Investigation of Alloys of the System: Palladium-Silver-Copper." Sub 13 Jun 52, Moscow Order of Lenin State U imeni M. V. Lomonosov. (Dissertation for the Degree of Candidate in Chemical Sciences).

SO: Vechernaya Moskva January-December 1952

FD-677

SOKOLOVSKAYA, Yo. M.
USSR/Chemistry - Silver-chrome alloys

Card 1/1 : Pub. 129 - 12/25

Author : Grigor'yev, A. T.; Sokolovskaya, Ye. M.; Kruglova, M. I.

Title : Alloys of silver with chromium

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, Vol. 9, No. 3, 77-82, May 1954

Abstract : Investigate the silver-chromium system by thermal analysis, micro-hardness measurements, and study of macro-and micro-structures. Establish the silver-chromium equilibrium diagram from these results.

Institution : Laboratory of the Chemistry of Metallic Alloys

Submitted : February 4, 1952

Evaluation B-82533

Sokolovskaya, E. M.

Study of alloys of palladium with silver and copper. V. A. Nemilov, A. T. Grigor'ev, and E. M. Sokolovskaya (M. V. Lomonosov State Univ., Moscow). *Issled. Splavov Platiny i Drug. Blagorod. Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 29, 103-52(1955); cf. *C.A.* 37, 2704^9; 44, 6297*c*; 45, 522*d*; 49, 2143*h*.—The previous work on the 3 binary systems and the ternary system was reviewed. For the exptl. work 60 alloys were prepd. covering the ternary compn. triangle from 10 to 80 wt. % Pd in steps of 10% or less. Sponge Pd, 99.96% pure, Ag 99.99%, and Cu 99.97% were melted under $BaCl_2$. Most of the alloys were analyzed chemically. The alloys were studied by thermal analysis, metallography, hardness tests, and by specific elec. resistance, and its temp. coeff. Cast alloys that had been annealed for 150 to 200 hrs. near the solidus temp. and then slowly cooled to room temp. were studied microscopically. An addnl. heating for 10 to 40 hrs. at temps. from 400 to 975° preceded quenching in ice water. Brinell hardness values were obtained with a 10-mm. ball and a 250-kg. load. Elec. resistance was measured on wire specimens. Microhardness was measured in the range 40 to 60% Pd under loads of 20 to 100 g. Differential heating curves were obtained at 7°/min. The results showed the expected general features and were presented in the form of vertical sections at 10% intervals in Pd content, the liquidus surface, and a composite diagram of isothermal sections. The binary eutectic line extended into the diagram to 30% Pd. Beyond this compn. the 3-phase region in the vertical section was still triangular with its vertex just below the liquidus curve. Also, when the 3-phase region broke away from the liquidus surface the triangular conjode changed into a line connecting the compn. of the end of the eutectic line with the crit. point of the surface of solid solns. The mutual soly. of Ag and Cu increased with increase in percent Pd. The region of ternary solid solns. at room temp. extended from the Pd corner of the diagram to 56% Pd. The presence of the binary compds. $PdCu_3$ and Pd_2Cu_3 was indicated. The max. hardness, about 140 Brinell, occurred at about 50% Pd and 25% Ag. The max. elec. resistance, about 60 microhm cm., occurred at about 70% Pd and 14% Ag. A. G. Guy

(2)

SOKOLOVSKAYA, Ye.M.

E-4

Category : USSR/Solid State Physics - Systems

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3782

Author : Grigor'ev, A.T., Sokolovskaya, Ye. M., Maksimova, M.V.
Title : Investigation of Alloys of the Gold-Cobalt System

Orig Pub : Zh. neorgan. khimii, 1956, 1, No 5, 1047-1051

Abstract : The microstructure, hardness, electric resistivity, and temperature coefficient of electric resistivity of Au-Co alloys were studied. The initial materials were 99.99% gold and cobalt containing approximately 0.01% carbon. The resulting diagram of state is good agreement with data of other investigators. Increasing the Co content results in a linear increase in the hardness of the alloys in the two-phase region, reaching 145 kg/mm^2 at 98% Co. In the solid-solution region, the hardness drops off towards the pure components, sharply towards Au, and less sharply towards Co. The electric resistivity of the alloys first increases as Co is added, and then varies almost linearly with a slight reduction towards Co. The temperature coefficient of the electric resistivity varies also almost linearly in the two-phase region, and increases with increasing content of Co.

Card : 1/1

SOKOLOVSKAYA, Ye. M.

E-4

Category : USSR/Solid State Physics - Systems

Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 6599

Author : Grigor'yev, A.T. Sokolovskaya, Ye.M., Budernaya, L.D., Iyutina, I.A., Maksimova, M.V.

Title : Investigation of the Palladium-Gold-Cobalt System

Orig Pub : Zh. neorgan. khimii, 1956, 1, No 5, 1052-1063

Abstract : Thermal-analysis methods and studies of the hardness and the microstructure after annealing and hardening from different temperatures, of the specific electric resistivity, and of its temperature coefficients were all used for the first time to study the Pd-Au-Co triple system. The two-phase region in the gold-cobalt system spreads extensively into the triple region, which reaches up to 47% Pd at the center of the diagram at room temperature, and is gradually reduced with increasing temperature, reaching 35% Pd at 1000°. The double-eutectic line starts out from the eutectic point of the Au-Co system and extends into the triple system until it reaches a section with 20% Pd. The remaining portion of

Card : 1/2

SOKOLOVSKAYA, Ye.M.

B-3

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physico-Chemical Analysis. Phase Transitions

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3731

Author : Grigor'yev A.T., Panteleymonov L.A., Sokolovskaya Ye.M., Bunina T.V., Mastyugina M.V.

Inst : Institute of General and Inorganic Chemistry, Academy of Sciences USSR

Title : Investigation of Alloys of the Palladium-Cobalt-Nickel System

Orig Pub : Izv. Sektora Fiz.-khim. analiza IONKh, AN SSSR, 1956, 27, 185-197

Abstract : By methods of thermal analysis, investigations of microstructure, hardness and electric resistance, a study has been made of the Pd-Co-Ni system. Shape of liquidus and solidus curves of sections with constant Pd content, and also the microstructure of the alloys, indicate that the components of the ternary system Pd-Co-Ni form with one

-80 -

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B-8

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physico-Chemical Analysis. Phase Transitions

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3731

take place along curves not similar to curves of binary systems with a continuous series of solid solutions.

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Card 3/3

5(3), 18(6) SOV/156-59-2-15/48

AUTHORS: Pyatnitskiy, V. N., Grigor'yev, A. T., Sokolovskaya, Ye. M.

TITLE: On Transformations in Solid Phase in Alloys of the System Silver - Zinc in the Range of the Solid α-Solution (O prevrashcheniyakh v tverdom sostoyanii v splavakh sistemy serebro - tsink v oblasti α-tverdogo rastvora)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 2, pp 280-283 (USSR)

ABSTRACT: Investigations by other authors (Refs 1-10) pointed out anomalies in the system silver - zinc which are more closely investigated by the present paper. The method of differential thermal analysis, the measurement of the electric resistance at high temperature and its temperature coefficient, as well as hardness are applied. The differential curves of thermal analysis show each of them two heat effects at low and at high temperature (Fig 1) pointing out endothermal transformations in the α-range and which are caused by stable phase transitions. Figure 2 gives the phase diagram and table 1 the temperatures at which the effects set in. The phase diagram shows that at long annealing Ag_3Zn forms which has two modifications: α_1 at low and α_2 at high temperature. The curves

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On Transformations in Solid Phase in Alloys of the System Silver - Zinc in the Range of the Solid α-Solution

electric resistance - temperature (Fig 3) of the alloys with 17.6 - 36.0% by atom Zn confirm the formation of Ag_3Zn and facilitate a more accurate determination of the transformation temperature (Table 2). The differences between the values of the thermal analysis and the measurement of resistance are explained by the different rates of heating. The hardness of annealed alloys (Table 3, Fig 4) shows in the range of 25% by atom Zn a broad, flat minimum which is also indicative of Ag_3Zn. The minimum at 31% by atom Zn might indicate the limit of the solubility of zinc in silver at low temperature. The temperature coefficient of the electric resistance shows a maximum at 25% by atom zinc which is also explained by the formation of Ag_3Zn. There are 4 figures, 4 tables, and 12 references, 2 of which are Soviet, and 1 Polish.

PRESENTED BY: Kafedra obshchey khimii Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Chair of General Chemistry, Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 28, 1958

5(2),18(7) SOV/78-4-9-18/44

AUTHORS: Pyatnitskiy, V. N., Grigor'yev, A. T., Sokolovskaya, Ye. M., Lysova, Ye. V.

TITLE: On Transformations in Solid State in the Alloys of the System Silver - Cadmium in the Range of the Solid α-Solution

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 9, pp 2039-2042 (USSR)

ABSTRACT: The above system was chosen in expectance of an analogy to the solid solutions Cu-Zn, Au-Zn, and Au-Cd, which exhibit transformations in the solid state. Thermal analysis was applied together with the determination of the hardness of annealed alloys hardened by quenching. Alloys containing 2 - 40 atom% Cd were investigated. Thermal analysis was carried out by means of a PK-52 pyrometer. Thermal effects indicating transformations in the solid α-solution occurred as shown in figure 1. Results are given in table 1, the phase diagram in figure 2. Compounds formed were Ag_3Cd at 370°, Ag_2Cd at 450°, and another below 700° containing 4 - 8 atom% Cd, the composition of which is being investigated. The hardness of the annealed alloys is given in table 2 and figure 3. One wide minimum in the region

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On Transformations in Solid State in the Alloys of the System Silver - Cadmium in the Range of the Solid α-Solution

SOV/78-4-9-18/44

25 - 33 atom % Cd replaces the two minima expected for Ag_3Cd and Ag_2Cd, thus indicating formation of a eutectic. The hardness of the alloys heated to 300 and 550° and quenched with solid carbon dioxide (Table 3, Fig 4) reveals that at 300° the minima in the regions 25 - 33 atom % and 4 - 8 atom % Cd are maintained whereas at 550° only the latter is preserved and still found at 650°. The heat capacity and electric resistance of these alloys at high temperatures are being investigated at present. There are 4 figures, 3 tables, and 7 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova Kafedra obshchey khimii (Moscow State University imeni M. V. Lomonosov, Chair of General Chemistry)

SUBMITTED: October 9, 1958

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5(2) SOV/78-4-9-38/44

AUTHORS: Grigor'yev, A. T., Guseva, L. I., Sokolovskaya, Ye. M., Maksimova, M. V.

TITLE: On Polymorphous Transformations of Chromium in Alloys With Tantalum

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 9, pp 2168-2169 (USSR)

ABSTRACT: The cooling curve for liquid chromium determined by N. A. Nedumov (Ref 4) exhibits, in the vicinity of the very distinct maximum corresponding to the crystallization temperature, a second maximum which relates to the transition of chromium into another modification at 1815°. By means of microscopic, thermal, and X-ray analyses the chromium-tantalum alloy was investigated in the range rich in chromium after hardening; The location of the solidus and the limits of solubility of Ta in Cr were checked. 1830° was found to be the temperature of transition between the modifications ε and δ. In contrast with the data obtained by N. Grant (Refs 1, 2) it was found that immediately after freezing chromium does not possess a face-centered but a cubic body-centered

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On Polymorphous Transformations of Chromium in Alloys With Tantalum

SOV/78-4-9-38/44

crystal lattice, which is in agreement with the fact that a continuous series of solid solutions of chromium and σ-iron form. There are 1 figure and 4 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova Kafedra obshchey khimii (Moscow State University imeni M. V. Lomonosov, Chair of General Chemistry)

SUBMITTED: January 12, 1959

Card 2/2

18.1150 2308, 1043, 1091

84308
S/189/60/000/004/004/006
B002/B060

AUTHORS: Grigor'yev, A. T., Sokolovskaya, Ye. M., Simanov, Yu. P., Sokolova, I. G., Pavlov, V. N., Maksimova, M. V.

TITLE: High-temperature Modifications of Chromium and the Phase Diagram of the System Chromium - Molybdenum in the Region Rich in Chromium

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 2, khimiya, 1960, No. 4, pp. 23 - 24

TEXT: A study of the binary system chromium - molybdenum (up to 22 wt% Mo) showed that due to the phase transformations of chromium there arise four zones of mixed crystal formation and three two-phase zones (Fig. 2), having their origin in the transformation points of chromium: 1830°C ($\varepsilon \rightleftarrows \delta$), 1650°C ($\delta \rightleftarrows \gamma$), and 1300°C ($\gamma \rightarrow \beta$). These transformation points are also found on the heating and cooling curves of chromium iodide (Fig. 1). X-ray analysis of the chilled samples gave the following results: The ε-modification is a body-centered cubic crystal with a = 2.887 ± 3 kX; the δ-phase is hexagonal, and for 13% Mo it has the constants a = 2.764 ± 3 kX and

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84308

High-temperature Modifications of Chromium and the Phase Diagram of the System Chromium - Molybdenum in the Region Rich in Chromium

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c/a ≈ 1.604; the γ-phase is a body-centered cubic crystal with a lattice constant similar to the ε-phase; the β-modification is probably a face-centered cubic crystal. Results obtained from studies of the systems Cr-Mo, Cr-W, Cr-Nb, Cr-Ta, Cr-Fe, Cr-Ni, Cr-Co, Cr-Fe-Ni, and Cr-Co-Ni, were communicated to the konferentsiya po zharoprochnym metallam i splavam (Conference on Heat-resistant Metals and Alloys) in April, 1958, and April, 1960, as well as to the VIII Mendeleyevskiy s"yezd (8th Mendeleyev Congress) in March, 1959. There are 2 figures and 2 non-Soviet references.

ASSOCIATION: Kafedra obshchey khimii (Chair of General Chemistry). Kafedra neorganicheskoy khimii (Chair of Inorganic Chemistry)

SUBMITTED: April 2, 1960

Card 2/2

18.1280

69024

AUTHORS: Grigor'yev, A. T., Sokolovskaya, Ye. M., Zargarova, M. I., Maksimova, M. V. S/078/60/005/04/021/040 B004/B016

TITLE: Investigation of Alloys of the Palladium - Silver - Chromium System

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 4, pp 894 - 901 (USSR)

ABSTRACT: The authors briefly refer to data available in publications on the binary systems Pd - Ag, Ag - Cr, and Pd - Cr and in this connection mention Ye. Ya. Rode (Ref 3), V. G. Kuznetsov (Ref 4), V. A. Nemilov et al. (Ref 5), and A. T. Grigor'yev et al. (Ref 7). To investigate the phase diagram of the ternary system Pd - Ag - Cr alloys of seven sections were prepared with a palladium content between 20 and 80% increasing by 10% each time. Furthermore, the sections with 35.65 and 75% palladium were investigated. Thermal analysis was made by means of an N. S. Kurnakov recording pyrometer. The results are given in table 1 and illustrated in figure 2. The hardness test was carried out by impressing a steel ball of a diameter of 10 mm with a load of 250 kg into the annealed specimens (Table 2, Fig 3). The microstructure (Figs 4,5) was investigated on samples etched by an alcoholic bromine solution. Electrical resistance at

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Investigation of Alloys of the Palladium - Silver - Chromium System

S/078/60/005/04/021/040
B004/B016

25 and 100° was determined by the potentiometric method (Table 1, Fig 6). Therefrom the temperature coefficient of electrical resistance was calculated (Table 1, Fig 7). On the basis of the resultant data the phase diagram (Fig 1) was plotted. The region of decomposition occurring in the Ag - Cr system likewise exists in the ternary system and reaches up to about 42% Pd. The largest part of the diagram consists of a region of mechanical mixing. A eutectic point is assumed to be near the Ag in the Ag - Cr system, which is connected with the eutectic point of the Pd - Cr system by the line of the double eutectic. Part of the diagram in the palladium corner consists of a solid solution resulting from the binary system Pd - Cr and adjoining the system Pd - Ag as a narrow zone. There are 7 figures, 2 tables, and 9 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova Kafedra obshchey khimii (Moscow State University imeni M. V. Lomonosov, Chair of General Chemistry)

SUBMITTED: January 31, 1959

Card 2/2

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S/078/60/005/05/19/037
B004/B016

18.1200

AUTHORS: Grigor'yev, A. T., Sokolovskaya, Ye. M., Altunina, L. N., Maksimova, M. V.

TITLE: Investigation of Alloys in the System Palladium - Copper - Chromium

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 5, pp. 1112-1118

TEXT: In the introduction the authors give a survey of publications dealing with the binary component systems of the ternary system Pd - Cu - Cr. They refer to papers by V. A. Nemilov et al. (Ref. 12) and A. A. Rudnitskiy (Ref. 13). Fig. 1 gives the phase diagrams of the binary systems (adjacent to the resultant diagram of the ternary system). The ternary system was investigated in nine sections with a Pd content of between 10 - 90 wt% Pd increasing by 10% each time. The thermal analysis was made by means of an N. S. Kurnakov pyrometer (Fig. 2). Further the microstructure of the alloys was investigated, which were annealed at 800-1,000° and hardened, as well as etched with alcoholic bromine solution (Figs. 3, 4). Their Brinell hardness was determined (Fig. 5), the electric resistance measured at 25° and 100° (Fig. 6), and its temperature coefficient determined (Fig. 7). The experimental data are also summarized in a table. The phase diagram is given in Fig. 1. The range of disintegration in the liquid state, which is observable in the system Cu-Cr, is also maintained in the phase diagram of the ternary system

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64541

Investigation of Alloys in the System Palladium - Copper - Chromium

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B004/B016

and reaches up to 35% Pd. The major part of the diagram is occupied by a mechanical mixture with a binary eutectic line which connects the eutectic points of the systems Cu-Cr and Pd-Cr. In the Pd corner there is a range of solid solution which originates from the system Pd-Cr and is adjacent to the system Pd-Cu as a narrow strip. The range of solid solution increases with increasing temperature. There are 7 figures, 1 table, and 14 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova Khimicheskiy fakul'tet Kafedra obshchey khimii (Moscow State University imeni M. V. Lomonosov, Chemical Department, Chair of General Chemistry)

SUBMITTED: February 20, 1959

Card 2/2

GRIGOR'YEV, A.T.; SOKOLOVSKAYA, Ye.M.; SIMANOV, Yu.P.; SOKOLOVA, I.G.; MAKSIMOVA, M.V.; PYATIGORSKAYA, L.I.

High-temperature forms of chromium and phase diagram of the system chromium - iron at high temperatures in the region rich in chromium. Zhur.neorg.khim. 5 no.9:2136-2138 S '60. (MIRA 13:11)

1. Moskovskiy gosudarstvennyy universitet, Kafedra obshchey khimii i Kafedra neorganicheskoy khimii.
(Chromium) (Iron)

87337
S/076/60/005/011/025/025/XX
B015/B060

18 1235 1045, 1454

AUTHORS: Grigor'yev, A. T., Sokolovskaya, Ye. M., Maksimova, M. V., Sokolova, I. G., Nedumov, N. A.

TITLE: Polymorphous Conversions of Chromium in Alloys With Tantalum

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 11, pp. 2640-2642

TEXT: The authors have established in Refs. 1-5 that chromium appears in five modifications in its alloys. In addition to data from Refs. 1, 2, the present article presents the results of a study on the polymorphism of chromium in the constitution diagram Cr - Ta in the chromium-rich region. The specimens prepared in previous experiments (Refs. 1, 2) with 0.2 to 12 wt% Ta were examined. In doing so, the authors applied the thermal method by recording the heating and cooling curves on N. A. Nedumov's device, and the differential heating curves of annealed alloys (up to 1350°C) by a ПК-52 (PK-52) pyrometer. Microhardness was measured, and X-ray analyses were made. The constitution diagram (Fig. 1) was drawn on the basis of microstructural determinations (Fig. 2) and thermal analyses (Table). The

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Polymorphous Conversions of Chromium in Alloys With Tantalum

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B015/B060

diagram displays five regions of solid solutions formed by the α-, β-, γ-, δ-, and ε-modifications as well as four two-phase regions α+β, β+γ, γ+δ, and δ+ε which proceed from the points of mutual transition of the chromium modifications: 1830°C ($\varepsilon \rightleftarrows \delta$), 1650°C ($\delta \rightleftarrows \gamma$), about 1300°C ($\gamma \rightleftarrows \beta$), and about 930°C ($\beta \rightleftarrows \alpha$). Four eutectoid transformations were established in the region of the Cr - Ta constitution diagram at 1490°C, 1150°C, 950°C, and 775°C, which are caused by the eutectoid decomposition of the respective solid solutions. X-ray data of the individual phases agree with those yielded by previous investigations. There are 2 figures, 1 table, and 5 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet, Kafedra obshchey khimii (Moscow State University, Department of General Chemistry)

SUBMITTED: June 6, 1960

Card 2/2

S/078/60/005/011/018/025
B015/B060

AUTHORS: Grigor'yev, A. T., Ye Yuy-Pu, Sokolovskaya, Ye. M.

TITLE: Constitution Diagram of the Chromium - Cobalt System in the Chromium-rich Region

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 11, pp. 2642 - 2644

TEXT: In continuation of earlier papers (Refs. 1-6), where it has been stated that in chromium alloys chromium has five modifications, the chromium polymorphism was studied here by drawing the Cr - Co constitution diagram in the chromium-rich region. The microstructure of specimens annealed and hardened at different temperatures was examined, thermal analyses were carried out, and hardness was measured along with microhardness. The specimens were annealed in argon at 1000°C for 20 h, at 900°C for 190 h, at 800°C for 190 h, at 700°C for 310 h, at 600°C for 320 h, at 500°C for 450 h, and at 400°C for 360 h, and were then allowed to cool down slowly to room temperature. The hardening took place at 1700°-1450°C in earlier described (Ref. 2) furnaces, or at 1300°-900°C in

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water. On the strength of data of microstructural analysis, a number of two-phase regions were determined on the constitution diagram (Fig. 1) ($\alpha + \beta$, $\beta + \gamma$, $\gamma + \delta$, $\delta + \varepsilon$) proceeding from the chromium ordinate and shifting toward lower temperatures with decreasing chromium content. At 1700°C the following phase regions were observed with rising cobalt content: δ-solid solution (99.1 at% Cr), mechanical mixture of solid solutions δ and ε (needle-shaped crystals from 97.5 at% Cr down), a very narrow region of homogeneity. The δ-phase does not form any corresponding alloy. Examination at the other hardening temperatures indicated the solid γ-solution, the mechanical mixture $\gamma + \delta$, the solid δ-solution and the mixture $\delta + \varepsilon$. As contrasting with other constitution diagrams on chromium base there occurs no eutectoid dissociation in the β-region, and the region is conserved down to low temperatures. The results of thermal analysis confirmed those obtained from microscopic examinations. The thermal effects (Table) at 1090° and 1080°C upon the curves of the alloys with 77.3 and 86.5 at% Cr correspond to the eutectoid horizontal, i.e., to the dissociation of the solid γ-solution, whereas the break at 1140°C (77.4 at% Cr) corresponds to the second eutectoid line, i.e., to the dissociation of the solid δ-solution. The thermal effects observed at

Constitution Diagram of the Chromium - Cobalt System in the Chromium-rich Region

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B015/B060

600-700°C could not be clarified. Measurements of microhardness showed that alloys of the same composition, but hardened from different phase regions, have different degrees of hardness. There are 2 figures, 1 table, and 7 references: 6 Soviet and 1 US.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet, Khimicheskiy fakul'tet (Moscow State University, Department of Chemistry)

SUBMITTED: June 6, 1960

Card 3/3

GRIGOR'YEV, A.T.; SOKOLOVSKAYA, Ye.M.; SIMANOV, Yu.P.; SOKOLOVA, I.G.; PAVLOV, V.I.

High-temperature modifications of chromium and the structural diagram of the system chromium - molybdenum in the region rich in chromium. Vest. Mosk un. Ser. 2: Khim. 15 no.4:23-24 Jl-Ag '60. (MIRA 13:9)

1. Kafedra obshchey khimii i kafedra neorganicheskoy khimii Moskovskogo universiteta.
(Chromium) (Molybdenum)

30340

S/189/61/000/006/001/005
D228/D304

18 1235

AUTHORS: Grigor'yev, A.T. and Sokolovskaya, Ye.M.

TITLE: Solid-state transformations in chromium and its alloys

PERIODICAL: Moscow, Universitet. Vestnik.Seriya II. Khimiya, No. 6, 1961, 3-15

TEXT: The authors discuss their own and other data on solid-state transformations in chromium and its alloys. The increased brittleness of such materials -- the cause of which is not definitely understood at present -- generally hinders their practical application, so the question of the allotropic modifications of chromium is of great interest. In recent years the investigation of chromium and its binary and ternary alloys has been carried out at the Laboratoriya khimii metallicheskikh splavov Kafedry obshchey khimii MGU (Laboratory of the Chemistry

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Solid-state transformations ...

of Metal Alloys, Department of General Chemistry, Moscow State University) by A.T. Grigor'yev et al. Their experimental techniques included thermal, microscopic, and X-ray analyses; hardness determinations; and electroresistance measurements. Equipment designed by N.A. Nedumov (Ref. 27: Zh.fiz.khimii, 34, no.1, 184, 1960) was employed to ascertain the transformation temperatures. By constructing structural diagrams for binary alloys of the system Cr - Ni the authors detected 5 homogeneous regions: $\alpha, \beta, \gamma, \delta, \varepsilon$. In accordance with N.S. Kurnakov's principle (Ref. 31: Vvedeniye v fiziko-khim. analiz [Introduction to physico-chemical analysis], Izd. AN SSSR, 1946) these monophase regions represent solid solutions formed on the base of modifications of chromium with body-centered cubic, face-centered cubic, and hexagonal structures. On quenching different alloys two-pnase regions were observed at the following Ni concentrations and temperatures: 4% - 1700°; 1%-1500°; and 13%-1500°. They are believed to be due to the polymorphic

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Solid-state transformations ...

conversion of the δ, γ, and β forms to the respective ε, δ, and γ modifications. The two-phase regions $\varepsilon + \delta$, $\delta + \gamma$, and $\gamma + \beta$ were also detected in binary Cr - W alloys. Here the eutechtoid decomposition of the solid solutions ε, δ, and γ_0 - with eutechtic points at 1320° (47% W), 1150° (16% W), and 1050° (12% W) respectively - is observed on the structural graph at the intersection of the three regions with the binodal curve; this is corroborated by data cited for the structure of alloys whose composition corresponds to these points. Analogous results were obtained by the authors when studying binary alloys of Cr with Nb, Ta, Mo, Fe, and Co. Their data for the ternary systems Cr - V - Mo and Cr - Fe - Ni, in which 3 three-phase and 4 two-phase regions occur, also confirm the main conclusions deduced from the investigation of binary systems: the existence of five polymorphic modifications of chromium - α, β, γ, δ, ε - with approximate transition temperatures of 930° for $\alpha \rightarrow \beta$, 1320° for

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$\beta \rightarrow \gamma$, 1650° for $\gamma \rightarrow \delta$, and 1830° for $\delta \rightarrow \varepsilon$. There are 13 figures and 32 references: 16 Soviet-bloc and 16 non-Soviet-bloc. The reference to the 4 most recent English-language publications read as follows: E.P. Abrahamson, N.I. Grant, Trans. Amer. Inst. Min.Met. Eng. 206, 975 (1955) and Ductile chromium, Amer. Soc. Met., 277, 287 (1957); M. Hansen, K. Anderko, Constitution of binary alloys, New York (1958); A.H. Edwards, J.Inst. Met. Australia, no. 2, 182 (1960).

ASSOCIATION: Kafedra obshchey khimii (Department of General Chemistry)

SUBMITTED: June 14, 1961

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21754

18.1235 1496, 1454, also 1418

S/078/61/006/005/013/015
B121/B208

AUTHORS: Grigor'yev, A. T., Sokolovskaya, Ye. M., Nedumov, N. A., Maksimova, M. V., Sokolova, I. G., and Ye Yuy Pu

TITLE: Polymorphous conversion of chromium and the phase diagram of the system chromium - nickel in the range of concentrated chromium

PERIODICAL: Zhurnal neorganicheskoy khimii, v 6, no. 5, 1961, 1248 - 1251

TEXT: The alloys of chromium with nickel were studied in the range of concentrated chromium by microscopic, thermal and X-ray analyses. Thermal analyses were made by recording the heating and cooling curves of the alloys hardened at 1200°C by means of a ПК-52 (PK-52) pyrometer. The phase diagram of the system chromium - nickel in the range of concentrated chromium was drawn on the basis of microstructural and thermal analyses; it is schematically presented in Fig. 1. Five homogeneous ranges of the solid solutions of α, β, γ, δ, and ε modifications of chromium

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Polymorphous conversion of ...

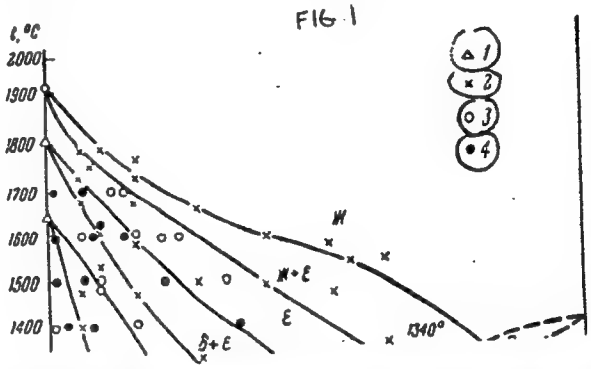
were found which are separated by diphase ranges $\alpha+\beta$, $\beta+\gamma$, $\gamma+\delta$, and $\delta+\varepsilon$. Four eutectoid conversions occur at 850, 960, 1140, and 1220°C. X-ray analysis indicated that the solid solution ε of the alloy with 17 % nickel has a body-centered cube with a = 2,879 ± 3 kX. In the alloy with 13 % nickel, hardened at 1400°C, with the solid solution $\varepsilon+\delta$ the hexagonal lattice of the solid solution of δ with the parameters a = 2.514 kX, c = 6,445 kX, and $\frac{c}{a}$ = 1,62 was found in addition to the body-centered cube of the solid solution of ε. The alloys with the phases $\alpha+\beta$ and β have a face-centered cube. Alloys with 17 % nickel, hardened at 900°C and more, have a face-centered cube. The results obtained are in good agreement with the data in Refs. 1 - 6 (Ref. 1: A. T. Grigor'yev, L. N. Guseva, Ye. M. Sokolovskaya, M. V. Maksimova. Zh. neorgan. khimii, 4, 2168 (1959). Ref. 2: A. T. Grigor'yev, Ye. M. Sokolovskaya, Yu. P. Simanov, I. G. Sokolova, V. N. Pavlov, M. V. Maksimova. Vesten. MGU, no. 4, seriya II, khimiya, 23 (1960). Ref. 3: A. T. Grigor'yev, Ye. M. Sokolovskaya, Yu. P. Simanov, I. G. Sokolova, M. V. Maksimova, L. I. Pyatigorskaya. Zh. neorgan. khimii, 5, 2136 (1960). Ref. 4: A. T. Grigor'yev, Ye. M. Sokolovskaya, M. V. Maksimova, I. G. Sokolova, N. A. Nedumov. Zh. neorgan.

Polymorphous conversion of ...

khimii, 5, 2640 (1960). Ref. 5: A. T. Grigor'yev, Ye Yuy Pu, Ye. M. Sokolovskaya. Zh. neorgan. khimii, 5, 2642 (1960). Ref. 6: A. T. Grigor'yev, Ye. M. Sokolovskaya, A. T. Nefedov, M. V. Maksimova. Vesten. MGU (in the press)). There are 2 figures, 1 table, and 14 references: 8 Soviet-bloc and 6 non-Soviet-bloc. The four most recent references to English-language publications read as follows: Ref. 7. M. Hansen, K. Anderko, Constitution of binary alloys, 1958; Ref. 8. D. S. Bloom, N. J. Grant, J. Metals, 3, 1009 (1951); Ref. 9: D. S. Bloom, J. W. Putman, N. J. Grant, J. Metals, 4, no. 6 (1952); Ref. 10: C. Stern, N. J. Grant, J. Metals, 7, 127 (1955).

SUBMITTED: December 8, 1960

FIG 1

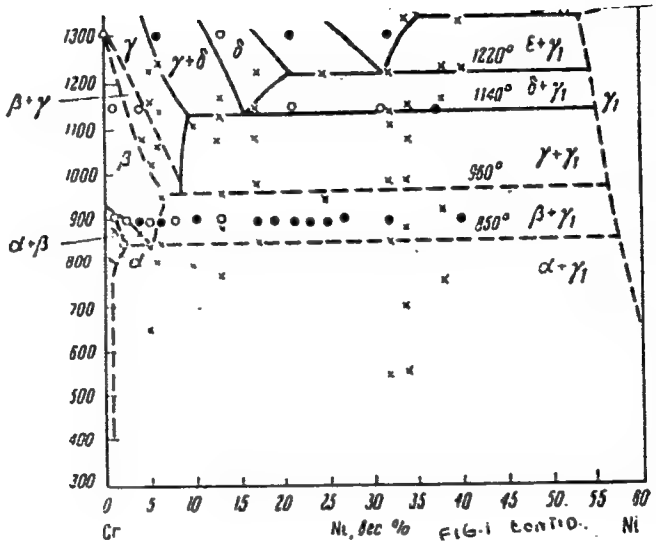


Card 3/4

S/078/61/006/005/013/015
B121/B208

Polymorphous conversion of ...

Fig. 1. Phase diagram of the system chromium - nickel in the range of concentrated chromium.
Legend:
1) polymorphous conversions;
2) thermal analysis;
3) one phase;
4) two phases



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24729

S/078/61/006/007/014/017
B117/B217

18 9200
18 1230

AUTHORS: Grigor'yev, A. T., Yeh Yü-p'u, Sokolovskaya, Ye. M.

TITLE: Study of the solid-state transitions in the part of the [illegible] chromium - cobalt [illegible] rich in cobalt

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 7, 1961, [illegible]

TEXT: The system chromium - cobalt was studied in the part containing up to [illegible] cobalt, the part of the system which is rich in chromium was already previously investigated and the results were published (Ref. 3: A. T. Grigor'yev, Yeh Yü-p'u, Ye. M. Sokolovskaya. Zh.neorgan.khimii., v. 5, no. 11, (1960)). This study supersedes and corrects a previous paper (Ref. 2: A. T. Grigor'yev, N. M. Gruzdeva. Izv. Sektora fiz.-khim. analiza, 24, 124 (1954)). The specimens were produced by melting together the pure elements at 900°C; subsequently, temperature was reduced to 400°C in the course of over two months, cooling to room temperature was carried out in the furnace. The following studies were carried out on the specimens: differential thermal analysis, studies of

Card 1/4

GRIGOR'YEV, A.T.; SOKOLOVSKAYA, Ye.M.

Transformation in the solid state occurring in chromium and alloys based on it. Vest.Mosk.Un.Ser.2: khim. 16 no.6:3-15 N-D '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet. Kafedra obshchey khimii.
(Chromium) (Chromium alloys)

18 1152

33282
S/078/62/007/002/018/019
B127/B110

AUTHORS: Grigor'yev, A. T., Sokolovskaya, Ye. M., Bogatyrev, I. L.

TITLE: Physicochemical study of phase transformations in Co-Mn alloys

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 2, 1962, 441-444

TEXT: Transformations of Co - Mn alloys in solid state were studied by the thermal differential analysis of hardness (ПК-52 (PK-52) pyrometer), measurement of the electrical resistance and its temperature coefficient, tests of microstructure and microhardness. At 30 atom% Mn, a transformation in the melt caused by a ε-α-transition of Co, was observed, with Mn lowering the temperature of transformation. A two-phase region, $\alpha+\beta$, $\beta+\gamma$ due to Mn polymorphy, was found in the part rich in Mn. Another transformation was found in the center part of the diagram caused by formation of CoMn occurring in two polymorphous modifications: γ_1 at low temperatures up to 515°C and γ_2 at high temperatures up to 805°C. Hardness tests showed a minimum at 50 atom% which corresponds to CoMn. Minima occurring at 25 and 75 atom% Mn indicate the possibility of Co_3Mn and

Card 1/3

Physicochemical study of phase...

$CoMn_3$ formations This, however, requires further studies F. Gal'perin is mentioned There are 4 figures, 1 table, and 4 references: 3 Soviet and 1 non-Soviet The reference to the English-language publication reads as follows M Hansen, K. Anderko, Constitution of binary alloys, 1958

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova, Kafedra obshchey khimii (Moscow State University imeni M. V. Lomonosov, Department of General Chemistry)

SUBMITTED: July 11, 1961

Fig. 2. Phase diagram Mn - Co (A. T. Grigor'ev et al.) (1) Thermal analysis; (2) electrical resistance; (3) one phase; (4) two phases.

Fig. 4. Hardness of tempered Co - Mn alloys. Abscissa: atom% Mn.

S/078/62/007/005/009/014
B101/B110

AUTHORS: Grigor'yev, A. T., Sokolovskaya, Ye. M., Pyatigorskaya, L.I., Maksimova, M. V.

TITLE: Solid-state conversions in alloys of the system chromium-iron

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 5, 1962, 1105-1109

TEXT: 60 alloys of electrolytic chromium and iron (up to 80 at% Fe) were investigated by plotting the differential heating curves, contact-free thermal high-temperature analysis, determining hardness and microhardness after 1000 hr tempering and subsequent hardening (1800-400°C in oil, 1300-300°C in H_2O). The phase diagram Cr-Fe was plotted on the basis of these data (Fig. 3). The existence of the five chromium modifications α-ε was confirmed. There are 4 figures and 2 tables. The most important English-language references are: P. O. Williams, H. W. Paxton, J. British Iron and Steel, Inst., 185, 358 (1958); P. O. Williams, Trans. Metallurg. Soc., ASME, 212, 497 (1958).

Card 1/3

S/078/62/007/005/009/014
B101/B110

Solid-state conversions in...

SUBMITTED: June 23, 1961

Fig. 3. Phase diagram of the system chromium-iron on the basis of the authors' results. (1) Polymorphous conversions; (2) thermal analysis; (3) electrical resistance; (4) one phase; (5) two phases.

Legend: Am.% Fe = at% Fe.

Card 2/3

Solid-state conversions in...

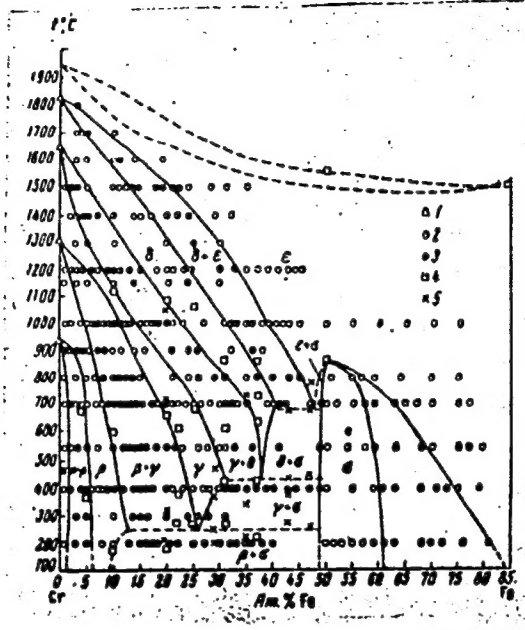

Fig. 3

Card 3/3

S/078/62/007/011/005/005
B101/B186

AUTHORS: Sokolovskaya, Ye. M., Grigor'yev, A. T., Smirnova, Ye. M.

TITLE: Solid-state conversions in alloys of the copper-manganese system which are rich in manganese

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 11, 1962, 2636-2638

TEXT: Copper-manganese alloys containing 0.5-31 atom% Mn were investigated by thermal analysis. Their hardness was determined, their microstructure was examined after 690 hr annealing in an argon atmosphere and after quenching from 550, 450, 700 or 800°C in a mixture of acetone with dry ice, their electrical resistances were measured at high temperature and they were subjected to x-ray analysis. The heating curves show thermal effects which indicate ordering of the solid γ-solution at 16.3 atom% Mn (Cu_9Mn) and 400°C, also at 25 atom% Mn (Cu_3Mn) and 450°C. The hardness curves are smooth for quenching temperatures of 800-700°C but irregular for 400-350°C, with minima corresponding to Cu_5Mn and Cu_3Mn. The formation of these compounds in the solid phase was manifest also in the curves of electrical